

#2

OIPE

P.5

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/967,237

DATE: 10/17/2001

TIME: 10:40:17

Input Set : A:\pto\_vsk.txt

Output Set: N:\CRF3\10172001\I967237.raw

ENTERED

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3 <110> APPLICANT: Zavada, Jan
4   Pastorekova, Silvia
5   Pastorek, Jaromir
7 <120> TITLE OF INVENTION: MN Gene and Protein
9 <130> FILE REFERENCE: D-0021.5B-2
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/967,237
C--> 12 <141> CURRENT FILING DATE: 2001-09-27
14 <150> PRIOR APPLICATION NUMBER: 09/178,115
15 <151> PRIOR FILING DATE: 1998-10-23
17 <160> NUMBER OF SEQ ID NOS: 116
19 <170> SOFTWARE: PatentIn Ver. 2.1
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 1522
23 <212> TYPE: DNA
24 <213> ORGANISM: HUMAN
26 <220> FEATURE:
27 <221> NAME/KEY: CDS
28 <222> LOCATION: (13)..(1389)
30 <220> FEATURE:
31 <221> NAME/KEY: mat_peptide
32 <222> LOCATION: (124)..(1389)
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36           Met Ala Pro Leu Cys Pro Ser Pro Trp Leu Pro Leu Leu
37           -35                      -30                      -25
39 atc ccg gcc cct gct cca ggc ctc act gtg caa ctg ctg ctg tca ctg 99
40 Ile Pro Ala Pro Ala Pro Gly Leu Thr Val Gln Leu Leu Leu Ser Leu
41           -20                      -15                      -10
43 ctg ctt ctg atg cct gtc cat ccc cag agg ttg ccc cgg atg cag gag 147
44 Leu Leu Leu Met Pro Val His Pro Gln Arg Leu Pro Arg Met Gln Glu
45           -5                      -1      1                      5
47 gat tcc ccc ttg gga gga ggc tct tct ggg gaa gat gac cca ctg ggc 195
48 Asp Ser Pro Leu Gly Gly Gly Ser Ser Gly Glu Asp Asp Pro Leu Gly
49   10                      15                      20
51 gag gag gat ctg ccc agt gaa gag gat tca ccc aga gag gag gat cca 243
52 Glu Glu Asp Leu Pro Ser Glu Glu Asp Ser Pro Arg Glu Glu Asp Pro
53 25                      30                      35                      40
55 ccc gga gag gag gat cta cct gga gag gag gat cta cct gga gag gag 291
56 Pro Gly Glu Glu Asp Leu Pro Gly Glu Glu Asp Leu Pro Gly Glu Glu
57           45                      50                      55
59 gat cta cct gaa gtt aag cct aaa tca gaa gaa gag ggc tcc ctg aag 339
60 Asp Leu Pro Glu Val Lys Pro Lys Ser Glu Glu Glu Gly Ser Leu Lys
61           60                      65                      70
63 tta gag gat cta cct act gtt gag gct cct gga gat cct caa gaa ccc 387
64 Leu Glu Asp Leu Pro Thr Val Glu Ala Pro Gly Asp Pro Gln Glu Pro
65           75                      80                      85
67 cag aat aat gcc cac agg gac aaa gaa ggg gat gac cag agt cat tgg 435

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69      90                      95                      100
71 cgc tat gga ggc gac ccg ccc tgg ccc cgg gtg tcc cca gcc tgc gcg 483
72 Arg Tyr Gly Gly Asp Pro Pro Trp Pro Arg Val Ser Pro Ala Cys Ala
73 105                      110                      115                      120
75 ggc cgc ttc cag tcc ccg gtg gat atc cgc ccc cag ctc gcc gcc ttc 531
76 Gly Arg Phe Gln Ser Pro Val Asp Ile Arg Pro Gln Leu Ala Ala Phe
77                      125                      130                      135
79 tgc ccg gcc ctg cgc ccc ctg gaa ctc ctg ggc ttc cag ctc ccg ccg 579
80 Cys Pro Ala Leu Arg Pro Leu Glu Leu Gly Phe Gln Leu Pro Pro
81                      140                      145                      150
83 ctc cca gaa ctg cgc ctg cgc aac aat ggc cac agt gtg caa ctg acc 627
84 Leu Pro Glu Leu Arg Leu Arg Asn Asn Gly His Ser Val Gln Leu Thr
85                      155                      160                      165
87 ctg cct cct ggg cta gag atg gct ctg ggt ccc ggg cgg gag tac cgg 675
88 Leu Pro Pro Gly Leu Glu Met Ala Leu Gly Pro Gly Arg Glu Tyr Arg
89                      170                      175                      180
91 gct ctg cag ctg cat ctg cac tgg ggg gct gca ggt cgt ccg ggc tcg 723
92 Ala Leu Gln Leu His Leu His Trp Gly Ala Ala Gly Arg Pro Gly Ser
93 185                      190                      195                      200
95 gag cac act gtg gaa ggc cac cgt ttc cct gcc gag atc cac gtg gtt 771
96 Glu His Thr Val Glu Gly His Arg Phe Pro Ala Glu Ile His Val Val
97                      205                      210                      215
99 cac ctc agc acc gcc ttt gcc aga gtt gac gag gcc ttg ggg cgc ccg 819
100 His Leu Ser Thr Ala Phe Ala Arg Val Asp Glu Ala Leu Gly Arg Pro
101                      220                      225                      230
103 gga ggc ctg gcc gtg ttg gcc gcc ttt ctg gag gag ggc ccg gaa gaa 867
104 Gly Gly Leu Ala Val Leu Ala Ala Phe Leu Glu Glu Gly Pro Glu Glu
105                      235                      240                      245
107 aac agt gcc tat gag cag ttg ctg tct cgc ttg gaa gaa atc gct gag 915
108 Asn Ser Ala Tyr Glu Gln Leu Leu Ser Arg Leu Glu Glu Ile Ala Glu
109                      250                      255                      260
111 gaa ggc tca gag act cag gtc cca gga ctg gac ata tct gca ctc ctg 963
112 Glu Gly Ser Glu Thr Gln Val Pro Gly Leu Asp Ile Ser Ala Leu Leu
113 265                      270                      275                      280
115 ccc tct gac ttc agc cgc tac ttc caa tat gag ggg tct ctg act aca 1011
116 Pro Ser Asp Phe Ser Arg Tyr Phe Gln Tyr Glu Gly Ser Leu Thr Thr
117                      285                      290                      295
119 ccg ccc tgt gcc cag ggt gtc atc tgg act gtg ttt aac cag aca gtg 1059
120 Pro Pro Cys Ala Gln Gly Val Ile Trp Thr Val Phe Asn Gln Thr Val
121                      300                      305                      310
123 atg ctg agt gct aag cag ctc cac acc ctc tct gac acc ctg tgg gga 1107
124 Met Leu Ser Ala Lys Gln Leu His Thr Leu Ser Asp Thr Leu Trp Gly
125                      315                      320                      325
127 cct ggt gac tct cgg cta cag ctg aac ttc cga gcg acg cag cct ttg 1155
128 Pro Gly Asp Ser Arg Leu Gln Leu Asn Phe Arg Ala Thr Gln Pro Leu
129                      330                      335                      340
131 aat ggg cga gtg att gag gcc tcc ttc cct gct gga gtg gac agc agt 1203
132 Asn Gly Arg Val Ile Glu Ala Ser Phe Pro Ala Gly Val Asp Ser Ser

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133 345          350          355          360
135 cct cgg gct gct gag cca gtc cag ctg aat tcc tgc ctg gct gct ggt 1251
136 Pro Arg Ala Ala Glu Pro Val Gln Leu Asn Ser Cys Leu Ala Ala Gly
137          365          370          375
139 gac atc cta gcc ctg gtt ttt ggc ctc ctt ttt gct gtc acc agc gtc 1299
140 Asp Ile Leu Ala Leu Val Phe Gly Leu Leu Phe Ala Val Thr Ser Val
141          380          385          390
143 gcg ttc ctt gtg cag atg aga agg cag cac aga agg gga acc aaa ggg 1347
144 Ala Phe Leu Val Gln Met Arg Arg Gln His Arg Arg Gly Thr Lys Gly
145          395          400          405
147 ggt gtg agc tac cgc cca gca gag gta gcc gag act gga gcc 1389
148 Gly Val Ser Tyr Arg Pro Ala Glu Val Ala Glu Thr Gly Ala
149          410          415          420
151 tagaggctgg atcttgaga atgtgagaag ccagccagag gcactctgagg gggagccggt 1449
153 aactgtcctg tctgtctcat tatgccactt ccttttaact gccagaagaat tttttaaaat 1509
155 aaatatttat aat 1522
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159 <211> LENGTH: 459
160 <212> TYPE: PRT
161 <213> ORGANISM: HUMAN
163 <400> SEQUENCE: 2
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167 Pro Ala Pro Gly Leu Thr Val Gln Leu Leu Leu Ser Leu Leu Leu Leu
168          -20          -15          -10
170 Met Pro Val His Pro Gln Arg Leu Pro Arg Met Gln Glu Asp Ser Pro
171          -5          -1 1          5          10
173 Leu Gly Gly Gly Ser Ser Gly Glu Asp Asp Pro Leu Gly Glu Glu Asp
174          15          20          25
176 Leu Pro Ser Glu Glu Asp Ser Pro Arg Glu Glu Asp Pro Pro Gly Glu
177          30          35          40
179 Glu Asp Leu Pro Gly Glu Glu Asp Leu Pro Gly Glu Glu Asp Leu Pro
180          45          50          55
182 Glu Val Lys Pro Lys Ser Glu Glu Glu Gly Ser Leu Lys Leu Glu Asp
183          60          65          70          75
185 Leu Pro Thr Val Glu Ala Pro Gly Asp Pro Gln Glu Pro Gln Asn Asn
186          80          85          90
188 Ala His Arg Asp Lys Glu Gly Asp Asp Gln Ser His Trp Arg Tyr Gly
189          95          100          105
191 Gly Asp Pro Pro Trp Pro Arg Val Ser Pro Ala Cys Ala Gly Arg Phe
192          110          115          120
194 Gln Ser Pro Val Asp Ile Arg Pro Gln Leu Ala Ala Phe Cys Pro Ala
195          125          130          135
197 Leu Arg Pro Leu Glu Leu Leu Gly Phe Gln Leu Pro Pro Leu Pro Glu
198          140          145          150          155
200 Leu Arg Leu Arg Asn Asn Gly His Ser Val Gln Leu Thr Leu Pro Pro
201          160          165          170
203 Gly Leu Glu Met Ala Leu Gly Pro Gly Arg Glu Tyr Arg Ala Leu Gln
204          175          180          185

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```

206 Leu His Leu His Trp Gly Ala Ala Gly Arg Pro Gly Ser Glu His Thr
207           190           195           200
209 Val Glu Gly His Arg Phe Pro Ala Glu Ile His Val Val His Leu Ser
210           205           210           215
212 Thr Ala Phe Ala Arg Val Asp Glu Ala Leu Gly Arg Pro Gly Gly Leu
213 220           225           230           235
215 Ala Val Leu Ala Ala Phe Leu Glu Glu Gly Pro Glu Glu Asn Ser Ala
216           240           245           250
218 Tyr Glu Gln Leu Leu Ser Arg Leu Glu Glu Ile Ala Glu Glu Gly Ser
219           255           260           265
221 Glu Thr Gln Val Pro Gly Leu Asp Ile Ser Ala Leu Leu Pro Ser Asp
222           270           275           280
224 Phe Ser Arg Tyr Phe Gln Tyr Glu Gly Ser Leu Thr Thr Pro Pro Cys
225           285           290           295
227 Ala Gln Gly Val Ile Trp Thr Val Phe Asn Gln Thr Val Met Leu Ser
228 300           305           310           315
230 Ala Lys Gln Leu His Thr Leu Ser Asp Thr Leu Trp Gly Pro Gly Asp
231           320           325           330
233 Ser Arg Leu Gln Leu Asn Phe Arg Ala Thr Gln Pro Leu Asn Gly Arg
234           335           340           345
236 Val Ile Glu Ala Ser Phe Pro Ala Gly Val Asp Ser Ser Pro Arg Ala
237           350           355           360
239 Ala Glu Pro Val Gln Leu Asn Ser Cys Leu Ala Ala Gly Asp Ile Leu
240           365           370           375
242 Ala Leu Val Phe Gly Leu Leu Phe Ala Val Thr Ser Val Ala Phe Leu
243 380           385           390           395
245 Val Gln Met Arg Arg Gln His Arg Arg Gly Thr Lys Gly Gly Val Ser
246           400           405           410
248 Tyr Arg Pro Ala Glu Val Ala Glu Thr Gly Ala
249           415           420

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253 &lt;210&gt; SEQ ID NO: 3

254 &lt;211&gt; LENGTH: 29

255 &lt;212&gt; TYPE: DNA

256 &lt;213&gt; ORGANISM: HUMAN

258 &lt;400&gt; SEQUENCE: 3

259 cgcccagtgg gtcattctcc ccagaagag

29

262 &lt;210&gt; SEQ ID NO: 4

263 &lt;211&gt; LENGTH: 19

264 &lt;212&gt; TYPE: DNA

265 &lt;213&gt; ORGANISM: HUMAN

267 &lt;400&gt; SEQUENCE: 4

268 ggaatcctcc tgcattccgg

19

271 &lt;210&gt; SEQ ID NO: 5

272 &lt;211&gt; LENGTH: 10898

273 &lt;212&gt; TYPE: DNA

274 &lt;213&gt; ORGANISM: HUMAN

276 &lt;220&gt; FEATURE:

277 &lt;221&gt; NAME/KEY: gene

278 &lt;222&gt; LOCATION: (1)..(10898)

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279 <223> OTHER INFORMATION: full-length MN genomic sequence

281 <220> FEATURE:

W--> 282 <221> NAME/KEY: unsure of base at position 1974

283 <222> LOCATION: (1974)

284 <223> OTHER INFORMATION: unsure of base at position 1974, which is in the 5' region flanking the

285 transcription initiation site (3507) as determined by RNase protection assay.

287 <400> SEQUENCE: 5

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288 ggatcctgtt gactcgtgac cttaccccca accctgtgct ctctgaaaca tgagctgtgt 60
289 ccactcaggg ttaaattgat taagggcggt gcaagatgtg ctttggtaaa cagatgcttg 120
290 aaggcagcat gctcgttaag agtcacacc aatccctaata ctcaagtaata cagggacaca 180
291 aacactgcgg aaggccgcag ggtcctctgc ctaggaaaac cagagacctt tgttcacttg 240
292 tttatctgac cttccctcca ctattgtcca tgacctgcc aaatccccct ctgtgagaaa 300
293 caccacaaga ttatcaataa aaaaataaat taaaaaaaaa aatacaaaaa aaaaaaaaaa 360
294 aaaaaaaaaa gacttacgaa tagttattga taaatgaata gctattggta aagccaagta 420
295 aatgatcata ttcaaaacca gacggccatc atcacagctc aagtctacct gatttgatct 480
296 ctttatcatt gtcattcttt ggattcacta gattagtcat catcctcaaa attctcccc 540
297 aagttctaata tacgttccaa acatttaggg gttacatgaa gcttgaacct actaccttct 600
298 ttgcttttga gccatgagtt gtaggaatga tgagtttaca ccttacatgc tggggattaa 660
299 tttaaacttt acctctaagt cagttgggta gcctttggct tatttttgta gctaattttg 720
300 tagttaatgg atgcaactgtg aatccttgcta tgatagtttt cctccacact ttgccactag 780
301 gggtaggtag gtactcagtt ttcagtaatt gcttacctaa gaccctaagc cctatttctc 840
302 ttgtactggc ctttatctgt aatatgggca tatttaatac aatataattt ttggagtttt 900
303 tttgtttgtt tgtttgtttg tttttttgag acggagtctt gcatctgtca tgcccaggct 960
304 ggagtagcag tggtgccatc tcggctcact gcaagctcca cctcccgagt tcacgcgcat 1020
305 ttcctgcctc agcctccoga gtagctggga ctacaggcgc ccgccaccat gcccggttaa 1080
306 ttttttgat ttttggtaga gacggggttt caccgtgtta gccagaatgg tctcgatctc 1140
307 ctgacttcgt gatccaccgc cctcggcctc ccaaagttct gggattacag gtgtgagcca 1200
308 ccgcacctgg ccaatttttt gagtctttta aagtaaaaat atgtcttgta agctggtaac 1260
309 tatggtacat ttctttttat taatgtgggt ctgacggtca tataggttct tttgagtttg 1320
310 gcatgcatat gctacttttt gcagtccttt cattacattt ttctctcttc atttgaagag 1380
311 catgttatat ctttttagctt cacttggctt aaaaggttct ctcattagcc taacacagtg 1440
312 tcattgttgg taccacttgg atcataagtg gaaaaacagt caagaaattg cacagtaata 1500
313 cttgtttgta agagggatga ttcaggtgaa tctgacacta agaaactccc ctacctgagg 1560
314 tctgagattc ctctgacatt gctgtatata ggcttttctt ttgacagcct gtgactcggg 1620
315 actatttttc ttaagcaaga tatgctaaag ttttgtgagc ctttttccag agagaggtct 1680
316 catatctgca tcaagtgaga acatataatg tctgcatggt tccatatttc aggaatgttt 1740
317 gcttgtgttt tatgttttta tatagacagg gaaacttgtt cctcagtgac caaaagagg 1800
318 tgggaattgt tattggatat catcattggc ccacgcttct tgaccttga aacaattaag 1860
319 ggttcataat ctcaattctg tcagaattgg tacaagaaat agctgctatg tttcttgaca 1920
W--> 320 ttccacttgg taggaaataa gaatgtgaaa ctcttcagtt ggtgtgtgtc cctngttttt 1980
321 ttgcaatttc cttcttactg tgttaaaaaa aagtatgatc ttgctctgag aggtgaggca 2040
322 ttcttaataca tgatctttta agatcaataa tataatcctt tcaaggatta tgtctttatt 2100
323 ataataaaga taatttgtct ttaacagaat caataatata atcccttaaa ggattatatt 2160
324 tttgctgggc gcagtggctc acacctgtaa tcccagcact ttgggtggcc aaggtggaag 2220
325 gatcaaattt gcctacttct atattatctt ctaaagcaga attcatctct cttccctcaa 2280
326 tatgatgata ttgacagggt ttgccctcac tcactagatt gtgagctcct gctcagggca 2340
327 ggtagcgttt tttgtttttg tttttgtttt tcttttttga gacagggtct tgctctgtca 2400
328 cccaggccag agtgcaatgg tacagtctca gctcactgca gcctcaaccg cctcggctca 2460
329 aaccatcatc ccatttcagc ctctgtagta gctgggacta caggcacatg ccattacacc 2520

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Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

## VERIFICATION SUMMARY

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Input Set : A:\pto\_vsk.txt

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L:11 M:270 C: Current Application Number differs, Replaced Application Number  
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:282 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:5  
L:320 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5  
L:517 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:9  
L:641 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (21) SEQUENCE:  
L:696 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:25  
L:702 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25  
L:718 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:26  
L:724 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26  
L:1363 M:259 W: Allowed number of lines exceeded, <223> Other Information:  
L:1366 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:58  
L:1372 M:259 W: Allowed number of lines exceeded, <223> Other Information:  
L:1407 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58  
L:1804 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:90  
L:1812 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:90  
L:1818 M:259 W: Allowed number of lines exceeded, <223> Other Information:  
L:1819 M:259 W: Allowed number of lines exceeded, <223> Other Information:  
L:1854 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:90  
L:2108 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:110  
L:2126 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:110